

Trend Study 9-20-00

Study site name: Seep Hollow.

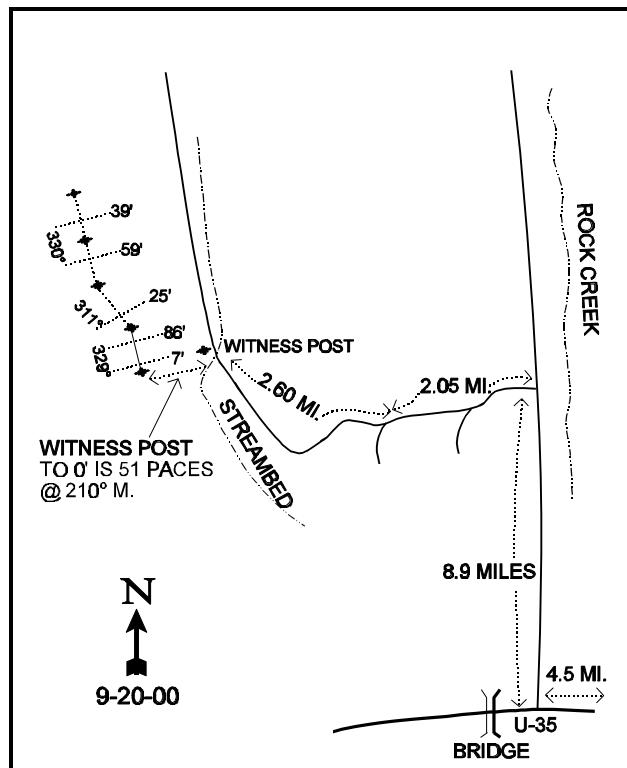
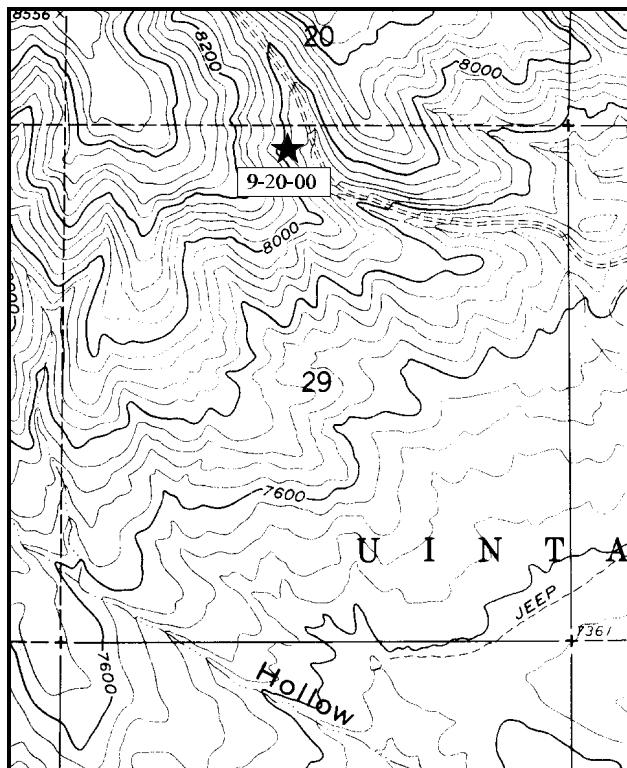
Range type: Mixed Mountain Brush.

Compass bearing: frequency baseline 329°M.

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (7 & 86ft), line 2 (25ft), line 3 (59ft), line 4 (39ft). No rebar marking belt placement.

LOCATION DESCRIPTION

From highway U-87, turn onto highway U-35 and travel west to the Rock Creek Road, which is just east of mile marker 59 and the bridge over the Duchesne River. Turn right onto Rock Creek Road and go north for 8.95 miles to a road on the left. Turn and travel west 2.05 miles to a fork. Bear right and proceed 2.6 miles to a streambed. From the intersection of the road and the streambed, the 0-foot baseline stake is 65 paces away at the heading of 210°M. The frequency baseline stakes are marked by green fenceposts 12-18 inches in height.



Map Name: Blacktail Mountain

Diagrammatic Sketch

Township 1S, Range 6W, Section 29

UTM 4468680.438 N, 535104.967 E

DISCUSSION

Trend Study No. 9-20 (12-9)

The Seep Hollow trend study used to be in the Currant Creek management unit (17), but is now within the South Slope management unit. This study is on deer and elk winter range in the Seep Hollow-Dry Mountain Hollow area. Elevation is slightly below 8,000 feet on a northeast exposure with a steep 50% to 60% slope. The site may not be accessible to wildlife during severe winters. The range type is mixed mountain brush on land owned by the Ute Indian Tribe. Pellet group transect data taken along the baseline in 2000 estimate 44 deer days use/acre (107 ddu/ha) and 15 elk days use/acre (36 edu/ha).

Soils are sandy loam in texture and very rocky on the surface and throughout the profile. Rocks range in size from a few inches to more than a foot in diameter. Due to the rockiness, effective rooting depth is estimated at only 8 inches. Excluding rock, litter and vegetative cover are excellent and considering steepness of the slope, erosion is minimal. Bare ground is quite low at about 10% of the ground surface.

Browse dominates the site by providing 67% of the total vegetative cover in 2000. Key species include: serviceberry, mountain big sagebrush, true mountain mahogany and bitterbrush. Serviceberry currently ('00) provides 32% of the browse cover with an estimated density of 1,400 plants/acre. Density increased since 1995 due to the increase in young plants from 280 plants/acre to 560, representing a 40% rate of recruitment. Mature plants also slightly increased from 640 to 820 plants/acre in 2000. They average about 4 feet in height with a 5 foot crown. A small portion of the mature serviceberry were classified as unavailable due to height. In 2000, percent decadency is low at 1%, vigor is good and utilization is light to moderate with only 3% heavy use.

Mountain big sagebrush density has remained fairly stable over all readings. Sagebrush density is currently estimated at 2,340 plants/acre with moderate decadency at 26%. This level of decadency is an increase from 14% in 1995, but still below the 1988 level of 32%, which was also a drought year. Poor vigor increased from 6% in 1995 to 28% in 2000. Increases in decadency and poor vigor on big sagebrush are drought related and have been documented on many other sagebrush stands in this unit in 2000. Biotic potential (number of seedlings) and recruitment are currently ('00) low at 1% and 3% respectively. It appears that this population is becoming increasingly mature with limited reproduction. Dead sagebrush numbered 560 plants/acre or 1 dead plant to every 4 live plants in 1995. This ratio improved in 2000 to 1:11. Utilization of mountain big sagebrush is light to moderate with less than 5% of the population showing heavy use in any year.

True mountain mahogany currently ('00) makes up 15% of the browse cover with an estimated density of 500 plants/acre. Density is lower in 2000 compared to 1995, as young plants decreased from 160 to 40 plants/acre. However, 8% recruitment in 2000 is still good. Its biotic potential (number of seedlings) is also estimated at 8%. Mature plants average about 3 feet in height and width, are moderate to heavily hedged, and display mostly good vigor in 2000. Heavy use increased from 9% of the population in 1995 to 48% in 2000. Decadency remains low at only 4%. Bitterbrush is currently estimated at 720 plants/acre, with nearly all of the population being mature individuals. Recruitment is low at 3%, but no decadent plants were sampled in 2000. Vigor is good. This species displays a prostrate growth form as it averages about 1½ feet in height by a nearly 4 foot crown. Use is moderate, with 22% of the population displaying heavy use in 2000.

The herbaceous understory is dominated by perennial grasses. Bluebunch wheatgrass, needle-and-thread and mutton bluegrass are the most common. All of these species remained at stable frequencies in 2000. Several other species that occur less frequently include: thickspike wheatgrass, a Carex, Sandberg bluegrass and squirreltail. All of these species significantly decreased in nested frequency in 2000 except squirreltail which remained stable. As a group, perennial grasses decreased in sum of nested frequency by 15% in 2000. Utilization of grasses is currently minimal. Forbs are somewhat diverse but relatively scarce compared to

grasses. They provided only 5% of the total vegetative cover at the site in 2000. The most common forbs include: biscuitroot, littleleaf alumroot, spring parsley and arrowleaf balsamroot. Perennial forb sum of nested frequency decreased by 32% in 2000 due to drought. Annual forbs had a higher sum of nested frequency in 1995 than perennials did, but were nearly non-existent in 2000 with the dry conditions.

1982 APPARENT TREND ASSESSMENT

Soil and vegetative trend both appear stable. Although the site is on a steep slope, a good vegetative and litter cover limit soil loss. The browse component is in generally good condition and does not suffer from heavy use. A reasonable management objective might be to encourage expansion of true mountain mahogany and antelope bitterbrush. Hopefully, this could be achieved at the expense of low rabbitbrush and pricklypear.

1988 TREND ASSESSMENT

On this steep slope, ground cover is especially important for soil protection. Ground cover percentages are almost unchanged from 1982 and currently soil erosion is not a problem. The community is basically stable, but data comparisons between readings in 1982 and 1988 do indicate a few significant changes. There was a rather large decrease in the number of snowberry encountered on the density plots, but the other large browse species have maintained stable populations. Mountain big sagebrush appears to be more moderately hedged in recent years, in contrast to the lightly hedged growth form reported in 1982. Still, the key browse species have good vigor and adequate recruitment. In the understory, there has been an increase in the frequency and density of western wheatgrass. A decrease in forb density was noted, along with an increase in the number of several small shrubs such as slenderbush eriogonum, Oregon grape, low rabbitbrush and pricklypear cactus.

TREND ASSESSMENT

soil - stable (3)

browse - stable for key species (3)

herbaceous understory - stable (3)

1995 TREND ASSESSMENT

Trend for soil is slightly improved with a decline in percent bare ground from about 14% to almost 4%. Nested frequency of grasses and forbs also increased providing additional soil protection. Trend for key browse species is improving slightly for serviceberry, true mountain mahogany, bitterbrush and snowberry; but stable for the most abundant shrub, mountain big sagebrush which provides 27% of the browse cover. The population of sagebrush is becoming increasingly mature with no seedlings and few young observed. Density of the less desirable shrubs like mountain low rabbitbrush and wyeth eriogonum appear stable. Trend for the herbaceous understory is up with increased sum of nested frequency for perennial grasses and forbs. The 4 most abundant grasses all increased in nested frequency since 1988.

TREND ASSESSMENT

soil - slightly up (4)

browse - stable for sagebrush and slightly up for serviceberry, mountain mahogany, bitterbrush and snowberry (4)

herbaceous understory - up (5)

2000 TREND ASSESSMENT

Trend for soil is stable. Erosion remains minimal due to good protective cover from vegetation and litter. Bare ground increased, but remains quite low at about 10%. The ratio of protective ground cover (vegetation, litter,

and cryptogams) to bare soil decreased, but it still remains high at over 5:1 which indicates well disbursed ground cover. Trend for browse is stable overall. The preferred species: serviceberry, true mountain mahogany and bitterbrush show stable trends with good vigor, low decadency and acceptable levels of use. Mountain big sagebrush shows a slightly downward trend with increased decadency from 14% to 26%, increased poor vigor from 6% to 28% and low recruitment. These downward parameters are drought related and should improve with better precipitation in the future. Trend for the herbaceous understory is slightly down as sum of nested frequency of perennial grasses and forbs decreased in 2000 due to drought.

TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --

Herd unit 09 , Study no: 20

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	b82	b66	a22	2	33	25	9	.93	.19
G	Agropyron spicatum	157	160	122	52	64	55	43	2.94	4.10
G	Bromus tectorum (a)	-	b14	a2	-	-	6	1	.08	.00
G	Carex spp.	a21	b58	a32	17	12	25	12	1.12	.96
G	Koeleria cristata	9	2	9	2	4	2	4	.04	.36
G	Oryzopsis hymenoides	13	1	1	2	5	1	1	.03	.03
G	Poa fendleriana	122	124	142	35	50	47	51	2.27	4.82
G	Poa secunda	15	23	35	33	8	9	14	.48	.51
G	Sitanion hystrrix	a-	b11	ab5	2	-	4	2	.08	.03
G	Stipa comata	68	119	109	41	29	50	46	4.09	5.21
Total for Annual Grasses		0	14	2	0	0	6	1	0.07	0.00
Total for Perennial Grasses		487	564	477	186	205	218	182	12.01	16.23
Total for Grasses		487	578	479	186	205	224	183	12.09	16.24
F	Allium spp.	-	3	-	-	-	1	-	.00	-
F	Antennaria rosea	a-	b11	ab4	-	-	4	2	.07	.06
F	Arabis spp.	2	-	-	7	1	-	-	-	-
F	Artemisia ludoviciana	-	4	3	-	-	2	1	.18	.15
F	Astragalus spp.	-	5	1	1	-	2	1	.01	.00
F	Balsamorhiza sagittata	-	1	2	2	-	1	1	.15	.03
F	Castilleja linariaefolia	17	5	13	-	8	2	7	.06	.52
F	Calochortus nuttallii	a-	b13	a-	-	-	7	-	.04	-
F	Chenopodium leptophyllum (a)	-	2	-	-	-	2	-	.01	-
F	Cirsium spp.	7	7	2	-	4	4	1	.21	.15

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	<i>Collomia linearis</i> (a)	-	^b 119	^{a-}	-	-	55	-	.62	-
F	<i>Comandra pallida</i>	34	29	28	13	16	12	12	.21	.26
F	<i>Collinsia parviflora</i> (a)	-	^b 244	^a 12	-	-	82	4	1.53	.04
F	<i>Crepis acuminata</i>	^{a-}	^c 19	^b 7	-	-	11	4	.21	.07
F	<i>Cryptantha</i> spp.	^b 7	^{a-}	^{a-}	4	3	-	-	-	-
F	<i>Descurainia pinnata</i> (a)	-	^b 11	^{a-}	-	-	5	-	.05	-
F	<i>Draba</i> spp. (a)	-	^b 67	^{a-}	-	-	20	-	.20	-
F	<i>Erigeron eatonii</i>	-	1	-	-	-	1	-	.00	-
F	<i>Erigeron flagellaris</i>	4	4	4	-	2	2	2	.04	.18
F	<i>Eriogonum racemosum</i>	^{a-}	^b 7	^{ab} 3	-	-	4	1	.04	.03
F	<i>Eriogonum umbellatum</i>	-	-	7	9	-	-	2	-	.15
F	<i>Gayophytum ramosissimum</i> (a)	-	5	-	-	-	2	-	.01	-
F	<i>Heuchera parvifolia</i>	^{a-}	^b 41	^b 24	23	-	18	11	.93	.37
F	<i>Heterotheca villosa</i>	^{a-}	^{a-}	^b 8	-	-	-	3	-	.16
F	<i>Lappula occidentalis</i> (a)	-	3	-	-	-	2	-	.01	-
F	<i>Lithospermum ruderale</i>	^{a-}	^b 5	^b 4	-	-	3	3	.21	.06
F	<i>Lomatium</i> spp.	^a 20	^b 83	^{ab} 49	22	9	40	19	1.55	.39
F	<i>Lupinus argenteus</i>	-	-	3	-	-	-	1	-	.03
F	<i>Penstemon</i> spp.	^b 11	^{ab} 3	^{a-}	4	4	1	-	.15	-
F	<i>Penstemon procerus</i>	-	11	8	-	-	5	5	.12	.36
F	<i>Petradoria pumila</i>	-	3	1	-	-	1	1	.03	.03
F	<i>Polygonum douglasii</i> (a)	-	^b 20	^{a-}	-	-	11	-	.05	-
F	<i>Schoencrambe linifolia</i>	-	-	-	-	-	-	-	-	.03
F	<i>Senecio integerrimus</i>	13	12	12	3	6	6	6	.05	.05
F	<i>Sedum lanceolatum</i>	-	4	-	-	-	2	-	.01	-
F	<i>Senecio multilobatus</i>	-	-	3	-	-	-	1	-	.00
F	<i>Sphaeralcea coccinea</i>	-	2	2	-	-	1	1	.03	.00
F	<i>Stellaria jamesiana</i>	-	4	-	-	-	2	-	.01	-
Total for Annual Forbs		0	471	12	0	0	179	4	2.48	0.04
Total for Perennial Forbs		115	277	188	88	53	132	85	4.36	3.15
Total for Forbs		115	748	200	88	53	311	89	6.84	3.19

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --

Herd unit 09 , Study no: 20

T y p e	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Amelanchier alnifolia	30	37	9.44	12.58
B	Artemisia tridentata vaseyana	76	72	8.63	6.60
B	Cercocarpus montanus	24	19	5.23	5.76
B	Chrysothamnus viscidiflorus lanceolatus	37	28	.88	1.20
B	Eriogonum heracleoides	51	50	2.42	2.65
B	Mahonia repens	2	6	.00	.22
B	Opuntia spp.	24	18	.37	.25
B	Pediocactus simpsonii	3	0	.03	-
B	Pinus edulis	0	4	1.04	.56
B	Prunus virginiana	0	0	.03	-
B	Purshia tridentata	20	28	2.42	4.71
B	Symphoricarpos oreophilus	46	42	3.95	4.66
Total for Browse		313	304	34.46	39.23

BASIC COVER --

Herd unit 09 , Study no: 20

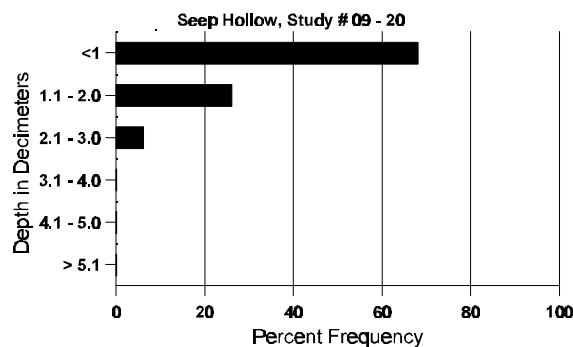
Cover Type	Nested Frequency		Average Cover %			
	'95	'00	'82	'88	'95	'00
Vegetation	360	343	8.50	7.50	43.34	58.95
Rock	242	215	10.50	14.00	14.42	14.38
Pavement	8	93	0	0	.07	1.13
Litter	394	386	64.25	64.25	60.95	66.43
Cryptogams	42	38	1.25	0	.33	1.05
Bare Ground	123	145	15.50	14.25	4.36	9.90

SOIL ANALYSIS DATA --

Herd Unit 09, Study # 20, Study Name: Seep Hollow

Effective rooting depth (inches)	Temp °F (depth)	pH	% sand	% silt	% clay	% OM	PPM P	PPM K	dS/m
8.36	57.6 (9.45)	6.7	73.3	16.2	10.6	4.7	9.6	102.4	0.7

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 09 , Study no: 20

Type	Quadrat Frequency	
	'95	'00
Rabbit	5	3
Elk	9	9
Deer	27	15

Pellet Transect	
Pellet Groups per Acre '00	Days Use per Acre (ha) '00
61	N/A
191	15 (37)
566	44 (107)

BROWSE CHARACTERISTICS --

Herd unit 09 , Study no: 20

A G E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Amelanchier alnifolia																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y	82	7	-	-	-	-	-	-	-	-	7	-	-	-	466		7
	88	5	1	-	-	-	-	-	-	-	5	1	-	-	400		6
	95	8	1	-	3	2	-	-	-	-	14	-	-	-	280		14
	00	22	2	-	2	-	-	2	-	-	28	-	-	-	560		28
M	82	3	2	-	-	-	-	-	-	-	5	-	-	-	333	16 14	5
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	56 32	1
	95	15	11	1	-	2	-	-	3	-	32	-	-	-	640	58 75	32
	00	8	4	1	2	11	1	12	2	-	41	-	-	-	820	52 63	41
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2
% Plants Showing			Moderate Use			Heavy Use			Poor Vigor			%Change					
		'82		17%			00%			00%					-42%		
		'88		14%			00%			00%					+49%		
		'95		35%			02%			00%					+34%		
		'00		24%			03%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'82	799	Dec:	0%		
												'88	466		0%		
												'95	920		0%		
												'00	1400		1%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total					
		1	2	3	4	5	6	7	8	9	1	2	3	4								
Artemisia tridentata vaseyana																						
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0					
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0					
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0					
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1					
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0					
	88	6	-	-	-	-	-	-	-	-	6	-	-	-	400		6					
	95	-	1	-	-	-	-	-	-	-	1	-	-	-	20		1					
	00	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3					
M	82	31	3	-	-	-	-	-	-	-	31	2	1	-	2266	19 24	34					
	88	6	16	-	-	-	-	-	-	-	22	-	-	-	1466	17 22	22					
	95	49	45	3	4	3	-	-	-	-	102	-	-	2	2080	21 31	104					
	00	70	4	3	6	-	-	-	-	-	61	-	22	-	1660	22 28	83					
D	82	-	4	2	-	-	-	-	-	-	-	2	3	1	400		6					
	88	8	4	1	-	-	-	-	-	-	11	-	1	1	866		13					
	95	4	13	-	-	-	-	-	-	-	12	-	-	5	340		17					
	00	19	7	-	1	2	-	2	-	-	18	2	5	6	620		31					
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0					
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0					
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	560		28					
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	220		11					
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>									
'82			18%			05%			13%				+ 2%									
'88			49%			02%			05%				-11%									
'95			51%			02%			06%				- 4%									
'00			11%			03%			28%													
Total Plants/Acre (excluding Dead & Seedlings)												'82	2666	Dec:	15%							
												'88	2732		32%							
												'95	2440		14%							
												'00	2340		26%							

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total								
		1	2	3	4	5	6	7	8	9	1	2	3	4											
Cercocarpus montanus																									
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1								
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2								
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	88	-	2	-	-	-	-	-	-	-	2	-	-	-	133		2								
	95	2	6	-	-	-	-	-	-	-	8	-	-	-	160		8								
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2								
M	82	5	3	-	-	-	-	-	-	-	6	-	2	-	533	33 21	8								
	88	-	5	-	-	-	-	-	-	-	5	-	-	-	333	28 39	5								
	95	5	11	3	4	3	-	-	-	-	26	-	-	-	520	44 47	26								
	00	1	1	4	1	6	7	2	-	-	21	-	1	-	440	36 38	22								
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	00	-	-	-	-	-	1	-	-	-	1	-	-	-	20		1								
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1								
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0								
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>				<u>%Change</u>															
'82		38%		00%		25%				-13%															
'88		100%		00%		00%				+31%															
'95		59%		09%		00%				-26%															
'00		28%		48%		04%																			
Total Plants/Acre (excluding Dead & Seedlings)										'82	533	Dec:	0%												
										'88	466		0%												
										'95	680		0%												
										'00	500		4%												

A	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total						
G	R	1	2	3	4	5	6	7	8	9	1	2	3	4									
E		Chrysanthemus viscidiflorus lanceolatus																					
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
	88	4	-	-	-	-	-	-	-	-	4	-	-	-	266		4						
	95	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1						
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
M	82	11	-	-	-	-	-	-	-	-	11	-	-	-	733	11 9	11						
	88	10	2	-	-	-	-	-	-	-	12	-	-	-	800	11 11	12						
	95	45	-	-	7	-	-	-	-	-	52	-	-	-	1040	15 16	52						
	00	37	-	-	3	-	-	1	-	-	39	-	2	-	820	14 13	41						
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
	88	2	-	-	2	-	-	-	-	-	4	-	-	-	266		4						
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
	00	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2						
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>											
'82			00%			00%			00%			+45%											
'88			10%			00%			00%			-20%											
'95			00%			00%			00%			-19%											
'00			00%			00%			05%														
Total Plants/Acre (excluding Dead & Seedlings)										'82	733	Dec:	0%										
										'88	1332		20%										
										'95	1060		0%										
										'00	860		5%										
Eriogonum corymbosum																							
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-						
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-						
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-						
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	13	13						
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>											
'82			00%			00%			00%														
'88			00%			00%			00%														
'95			00%			00%			00%														
'00			00%			00%			00%														
Total Plants/Acre (excluding Dead & Seedlings)										'82	0	Dec:	-										
										'88	0		-										
										'95	0		-										
										'00	0		-										

A	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
G	R	1	2	3	4	5	6	7	8	9	1	2	3	4			
E		Eriogonum heracleoides															
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	27	-	-	-	-	-	-	-	-	21	-	6	-	1800		27
	95	19	-	-	-	-	-	-	-	-	19	-	-	-	380		19
	00	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3
M	82	29	-	-	-	-	-	-	-	-	29	-	-	-	1933	13 10	29
	88	19	-	-	-	-	-	-	-	-	11	-	8	-	1266	5 7	19
	95	109	-	-	8	-	-	-	-	-	117	-	-	-	2340	8 15	117
	00	125	-	-	2	-	-	-	-	-	127	-	-	-	2540	6 9	127
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	3	-	-	-	-	-	-	-	-	-	-	-	-	60		3
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'82	00%		00%		00%		00%		00%					+37%		
	'88	00%		00%		00%		00%		30%					-11%		
	'95	00%		00%		00%		00%		00%					- 2%		
	'00	00%		00%		00%		00%		02%							
Total Plants/Acre (excluding Dead & Seedlings)												'82	1933	Dec:	0%		
												'88	3066		0%		
												'95	2720		0%		
												'00	2660		2%		
Mahonia repens																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	38	-	-	-	-	-	-	-	-	38	-	-	-	2533		38
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
M	82	16	-	-	-	-	-	-	-	-	16	-	-	-	1066	4 6	16
	88	5	-	-	-	-	-	-	-	-	2	-	3	-	333	3 5	5
	95	14	-	-	-	-	-	-	-	-	14	-	-	-	280	5 7	14
	00	16	-	-	-	-	-	-	-	-	16	-	-	-	320	4 5	16
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'82	00%		00%		00%		00%		00%					+63%		
	'88	00%		00%		00%		07%		07%					-90%		
	'95	00%		00%		00%		00%		00%					+18%		
	'00	00%		00%		00%		00%		00%							
Total Plants/Acre (excluding Dead & Seedlings)												'82	1066	Dec:	-		
												'88	2866		-		
												'95	280		-		
												'00	340		-		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Opuntia spp.																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y	82	7	-	-	-	-	-	-	-	-	7	-	-	-	466		7
	88	22	-	-	-	-	-	-	-	-	19	-	3	-	1466		22
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4
M	82	13	-	-	-	-	-	-	-	-	13	-	-	-	866	4 8	13
	88	15	-	-	-	-	-	-	-	-	13	-	2	-	1000	4 9	15
	95	44	-	-	-	-	-	-	-	-	44	-	-	-	880	3 8	44
	00	27	-	-	-	-	-	-	-	-	27	-	-	-	540	2 5	27
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>				<u>%Change</u>							
	'82	00%		00%		00%				+46%							
	'88	00%		00%		14%				-61%							
	'95	00%		00%		00%				-35%							
	'00	00%		00%		00%											
Total Plants/Acre (excluding Dead & Seedlings)										'82	1332	Dec:	0%				
										'88	2466		0%				
										'95	960		4%				
										'00	620		0%				
Pediocactus simpsonii																	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-
	95	3	-	-	-	-	-	-	-	3	-	-	-	-	60	2 4	3
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>				<u>%Change</u>							
	'82	00%		00%		00%											
	'88	00%		00%		00%											
	'95	00%		00%		00%											
	'00	00%		00%		00%											
Total Plants/Acre (excluding Dead & Seedlings)										'82	0	Dec:	-				
										'88	0		-				
										'95	60		-				
										'00	0		-				

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Pinus edulis																	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3
M	82	1	-	-	-	-	-	-	-	-	1	-	-	-	66	69 59	1
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	83 47	1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	00	-	-	-	1	-	-	-	-	-	1	-	-	-	20	- -	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
	'82	00%			00%			00%			+ 0%						
	'88	00%			00%			00%									
	'95	00%			00%			00%									
	'00	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'82	66	Dec:	-		
												'88	66		-		
												'95	0		-		
												'00	80		-		
Purshia tridentata																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	-	1	-	-	-	-	-	-	-	1	-	-	-	66		1
	95	1	-	-	2	-	-	-	-	-	3	-	-	-	60		3
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
M	82	1	4	-	-	-	-	-	-	-	5	-	-	-	333	12 16	5
	88	2	3	-	-	-	-	-	-	-	5	-	-	-	333	24 21	5
	95	9	11	-	3	1	-	-	-	-	24	-	-	-	480	16 37	24
	00	15	9	4	-	2	4	1	-	-	35	-	-	-	700	17 44	35
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
	'82	80%			00%			00%			+28%						
	'88	57%			00%			00%			+14%						
	'95	44%			00%			00%			+25%						
	'00	31%			22%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'82	333	Dec:	0%		
												'88	465		14%		
												'95	540		0%		
												'00	720		0%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total									
		1	2	3	4	5	6	7	8	9	1	2	3	4												
Symphoricarpos oreophilus																										
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	95	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2									
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1									
Y	82	1	-	-	2	-	-	-	-	-	3	-	-	-	200		3									
	88	8	2	-	-	-	-	-	-	-	10	-	-	-	666		10									
	95	14	-	-	6	-	-	-	-	-	20	-	-	-	400		20									
	00	11	-	-	-	-	-	5	-	-	16	-	-	-	320		16									
M	82	9	1	-	9	-	-	-	-	-	19	-	-	-	1266	16 27	19									
	88	-	2	-	-	-	-	-	-	-	2	-	-	-	133	28 22	2									
	95	72	-	-	25	-	-	-	-	-	97	-	-	-	1940	16 30	97									
	00	81	-	-	9	-	-	10	-	-	100	-	-	-	2000	13 21	100									
D	82	2	-	-	-	-	-	-	-	-	-	-	2	-	133		2									
	88	1	1	-	-	-	-	-	-	-	2	-	-	-	133		2									
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2									
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>														
'82			04%			00%			08%			-42%														
'88			36%			00%			00%			+60%														
'95			00%			00%			00%			+ 1%														
'00			00%			00%			00%																	
Total Plants/Acre (excluding Dead & Seedlings)												'82	1599	Dec:	8%											
												'88	932		14%											
												'95	2340		0%											
												'00	2360		2%											